

REMARKS

The Examiner rejected Claim 5 under 35 U.S.C. 103(a) as being unpatentable over Shiiki, *et al* (hereafter "Shiiki") (US 6,762,551), previously cited, in view of Mueller-Mach, *et al* (hereafter "Mueller") (US 6,630,691), a newly cited reference. The above amendments cancel Claim 5, and hence, render this rejection moot.

The Examiner rejected Claims 6 and 7 under 35 U.S.C. 103(a) as being unpatentable over Shiiki in view of Yamashita (US 4,599,537) previously cited. The above amendments cancel Claim 6, and hence, render this rejection moot with respect to that claim. Applicant traverses the rejection of Claim 7.

In making this rejection, the Examiner stated that Shiiki discloses the limitations in Claim 7 except for the cap being a spherical surface with constant thickness. The Examiner looks to Yamashita for the missing teaching. Specifically, the Examiner points to Figures 4 and 8 in Yamashita which show a spherical surface over an LED. The Examiner maintains that it would be obvious to make the cap layer of Shiiki in spherical form with constant thickness since such a cap would result in the light emitted being converged to a bright point or to parallel uniform rays. Applicant must disagree with the Examiner's argument.

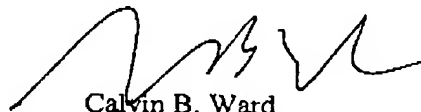
First, Yamashita teaches two forms of lenses that have a curved surface. Neither of these lenses is a sphere of constant thickness. Hence, one would need to modify the teachings of Yamashita to arrive at a cap that is a spherical surface of constant thickness.

Second, Applicant must respectfully disagree with the Examiner's proposed motivation for making such an alteration in the teachings of the references. First, Applicant must point out that a spherical surface of constant thickness does not have the optical properties claimed by the Examiner even if the cap were transparent. A spherical surface of constant thickness does not image a light source. As anyone skilled in basic optics knows, to provide such imaging, the two surfaces of the lens must not be parallel to one another. For example, a light bulb having a glass envelope that is a spherical element having a constant surface does not image or collimate the light source.

Finally, a spherical cap with phosphor particles suspended therein will not image the LED even if it was not of constant thickness. The light from a source consisting of an LED that illuminates phosphor particles in the cap comes from two sources. The first source is the light generated by the phosphor particles that are excited by the LED light. This light comes from a source that is the entire cap, and hence, no lens surface on the cap will provide the imaging functions described by the Examiner because the source is as big as the lens. The second source is the light from the LED that is not converted by the phosphor. Most of this light is scattered by the phosphor particles, and hence, this light also appears as if it originates in the cap and has a size equal to that of the cap. Furthermore, if unscattered light remains, one would not wish to collimate or image that light source, as it would lead to a device having a color that changes with distance from the light source. Hence, the motivation asserted by the Examiner is clearly flawed. Accordingly, the Examiner has not made a *prima facie* case for obviousness with respect to Claim 7.

I hereby certify that this paper is being sent by FAX to 517-273-8300.

Respectfully Submitted,



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